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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/071,143	02/07/2002	Volker Rheinberger	IVb17US	3534

7590 11/12/2004
John C. Thompson
69 Grayton Road
Tonawanda, NY 14150

EXAMINER

LAMB, BRENDA A

ART UNIT	PAPER NUMBER
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1734

DATE MAILED: 11/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/071, 143

Applicant(s)

Rheinberger et al

Examiner

LAMB

Group Art Unit

1734

—The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address—

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- ☒ Responsive to communication(s) filed on 7/07/2004
- ☐ This action is **FINAL**.
- ☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- ☒ Claim(s) 1, 4-5, 7-16 is/are pending in the application.
- Of the above claim(s) _____ is/are withdrawn from consideration.
- ☐ Claim(s) _____ is/are allowed.
- ☒ Claim(s) 1, 4-5 and 7-16 is/are rejected.
- ☐ Claim(s) _____ is/are objected to.
- ☐ Claim(s) _____ are subject to restriction or election requirement

Application Papers

- ☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.
- ☐ The drawing(s) filed on _____ is/are objected to by the Examiner
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119 (a)-(d)

- ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119 (a)-(d).
- ☐ All ☐ Some* ☐ None of the:
- ☐ Certified copies of the priority documents have been received.
- ☐ Certified copies of the priority documents have been received in Application No. _____.
- ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a))

*Certified copies not received: _____

Attachment(s)

- ☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____
- ☐ Interview Summary, PTO-413
- ☐ Notice of Reference(s) Cited, PTO-892
- ☐ Notice of Informal Patent Application, PTO-152
- ☐ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Other _____

Office Action Summary

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The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1, 6, 9 and 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamane et al 5,059,266.

Yamane et al teaches a method for producing a synthetic material part which is comprised of the following steps: spray applying with a spray device a material having at a least a polymerizable synthetic material onto a base in succeeding layers wherein the Yamane et al material has a viscosity which obviously would prevent run-off in order build a three dimensional shaped object; and hardening the already applied layer prior to the application of subsequent layers. The examiner has interpreted the term

"spray device" as being as an association of elements which permit spraying of layers of unpolymerization material. Yamane et al shows in Figure 18 that the light source 132 is mounted on the spray device which includes the combination of the spray nozzles and walls of the chamber. With respect to claim 9, Yamane et al teaches the spray applied material includes a material within the scope of the claim (see column 5 lines 22-29 and column 8 lines 22-29). With respect to claim 14, Yamane et al teaches the step of spraying includes spray applying a material in a three dimensional printing process and the step of hardening or curing includes hardening or curing the applied layers between application of the first and last layers. With respect to claims 12-13, Yamane et al teaches colors of each of layers may be varied. Therefore, it would have been obvious to control the plurality of Yamane et al ink jet nozzles such that the upper layer is more transparent than previously formed layer or outermost layer and first layer have the same composition since Yamane et al teaches the color/composition of each of the layers of the synthetic material is controllable dependent on desired end results.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamane et al 5,059,266 in view of Almquist et al.

Yamane et al is applied for the reasons noted above but fails to teach heating the material before spraying. However, it would have been obvious to heat the Yamane material before spraying since Almquist et al at column 24 lines 18-34 teaches doing so in a process for building a three-dimensional synthetic part using photosetting resin if desired to control viscosity of the applied material.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamane et al 5,059,266 in view of Uchinono et al.

Yamane et al is applied for the reasons noted above but fails to teach thermal treating after hardening step. However, Uchinono et al teaches in his third embodiment heating the last applied unpolymerized layer after hardening of the previous layer of synthetic material part in order to facilitate smoothening of the last applied unpolymerized layer. Therefore, it would have been obvious to modify the Yamane et al process by providing a step of heating the last applied layer since Uchinono et al teaches doing so in a process for building a three-dimensional synthetic part for the taught advantage of smoothening the outer surface of the three-dimensional synthetic part.

Claims 1, 4-5 and 7-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The recitation that the viscosity value of the wax-like material is so small that it is possible to perform a penetration of the spray jet thereinto in a favorable manner in claims 1, 5 and 10 is confusing since it is unclear what is favorable relative to and therefore unclear what the term "wax-like" is referring to.

Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

Applicant's argument that none of the prior art teaches a light source mounted on the spray device is found to be non-persuasive. The examiner has interpreted the term

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"spray device" as being as an association of elements which permit spraying of layers of unpolymerization material. Yamane et al shows in Figure 18 that the light source 132 is mounted on the spray device which includes the combination of the spray nozzles and walls of the ^{spray} chamber.

In response to applicant's arguments that as to the term "wax-like", the usual understanding would be a "dental material having a similar viscosity as wax", it is noted claims 1,7-9 and 12-14 are not directed to a dental material. Further as to claims 5, 10, 11 and 15-16 is noted that the recitation that the viscosity value of the wax-like material is so small that it is possible to perform a penetration of the spray jet thereinto in a favorable manner in claims 5 and 10 (directed to use and production of dental material) and even in claim 1 is confusing since it is unclear what is favorable relative to and therefore unclear what the term "wax-like" is referring to.

Claim 4 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

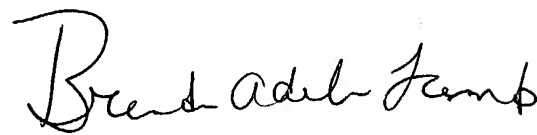
Claims 5, 10, 11 and 15-16 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brenda Lamb whose telephone number is (571) 272-1231. The examiner can normally be reached on Monday and Wednesday thru Friday with alternate Tuesdays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris Fiorilla can be reached on (571) 272-1187. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Brenda A. Lamb/LR
October 29, 2004

A handwritten signature in black ink, reading "Brenda A. Lamb". The signature is written in a cursive, flowing style.